CLAIMS

We claim:

1. A measuring device for determining oxygen activity in metal melts or slag melts, comprising a measuring head arranged on one end of a carrier tube, an electrochemical measuring cell being arranged on the measuring head, wherein the electrochemical measuring cell has a solid electrolyte tube (1) closed on one end and open on an opposite end, the solid electrolyte tube being surrounded on the closed end and at least on a portion of its periphery by a steel tube (2) closed on one end, wherein a reference material (3) and a filler material (4) adjoining the reference material are arranged inside the solid electrolyte tube at its closed end, wherein a metal rod is arranged as an electrode (5) along the solid electrolyte tube in such a manner that the metal rod stands in contact with the reference material and projects out of the open end of the solid electrolyte tube, wherein the open end of the solid electrolyte tube has a closure, and wherein the closure (7) is constructed as a cap, which fits on an exterior of the steel tube (2) or the solid electrolyte tube (1), and the closure (7) is gas-permeable.

2. The measuring device according to claim 1, wherein the closure (7) has openings (11) for gas-permeable connection of an interior of the solid electrolyte tube (1) with its surroundings.

3. The measuring device according to claim 2, wherein the openings (11) each have a cross-sectional area of at least 0.01 mm^2.

4. ~~The measuring device according to claim 1, wherein the closure (7) comprises plastic.~~

5. The measuring device according to claim 4, wherein the closure (7) comprises ~~poly~~olefin.

6. The measuring device according to claim 5, wherein the polyolefin comprises polypropylene.

~~7. The measuring device according to claim 1, wherein the closure (7) is porous.~~

8. The measuring device according to claim 2, wherein the openings (11) are evenly distributed around a longitudinal axis of the solid electrolyte tube (1).

9. The measuring device according to claim 8, wherein the closure has three to five of the openings (11).

10. The measuring device according to claim 1, wherein the closure (7) is fixed liquid-tight on the exterior of the steel tube (2) or the solid electrolyte tube (1).

11. The measuring device according to claim 1, wherein the closure (7) is fixed by latching devices (8; 9) on the exterior of the steel tube (2) or the solid electrolyte tube (1).

12. The measuring device according to claim 1, wherein the closure (7) has a central bushing which encloses the electrode (5).

13. The measuring device according to claim 12, wherein the closure (7) has a tube-shaped segment (13) in which the bushing is arranged, the tube–shaped segment extending along the electrode (5) and tightly enclosing the electrode (5).

14. The measuring device according to claim 12, wherein the closure (7) has a conical segment (12) between the bushing and a segment fitting on the exterior of the steel tube (2) or the solid electrolyte tube (1).

15. The measuring device according to claim 14, wherein the segment of the closure (7) fitting on the exterior of the steel tube (2) or the solid electrolyte tube (1) has a planar segment (10) arranged over the open end of the solid electrolyte tube (1) and oriented perpendicular to a longitudinal axis of the solid electrolyte tube (1).

16. The measuring device according to claim 15, wherein the openings (11) are arranged in the planar segment (10) oriented perpendicular to the longitudinal axis of the solid electrolyte tube (1).